



**Louisville Metro**  
Air Pollution Control District

# Lawn Care for Cleaner Air



Presented by  
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# Air Pollution Control District

## Agency Goals

Ensure healthy air for breathing

Help local businesses meet  
air quality standards

Educate and assist the public

# Educate and Assist



- Provide community outreach programs
  - Kentuckiana Air Education (KAIRE) Program
  - **Lawn Care for Cleaner Air (LCCA) Program**
- Assist businesses with air quality issues
  - Compliance assistance
  - Development plan review
- Apply for grant funding
  - National Clean Diesel Funding Assistance Program
  - P.O.W.E.R. Loan Program
- Facilitate stakeholder involvement
  - NAAQS attainment efforts
  - Emission reduction efforts
- Participate in community initiatives
  - Partnership for a Green City
  - Kentucky Clean Fuels Coalition
  - Community of Trees
  - Kentucky Asthma Partnership



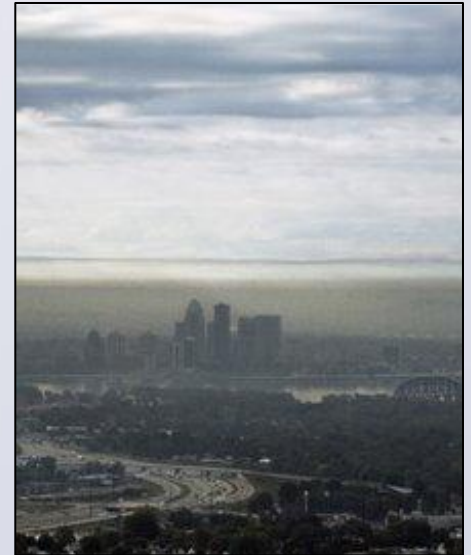
# Why Target Lawn Equipment?

- Pollutants of concern from lawn equipment:
  - Volatile Organic Compounds (VOC)
  - Carbon Monoxide (CO)
- Mowing for an hour with a gas-powered lawn mower emits about the same amount of smog-forming VOCs as driving almost 200 miles



# Ozone

- What is it?
  - Created through chemical reaction:  
 $\text{NO}_x + \text{VOC} + \text{Sunlight} = \text{O}_3$
- Where does it come from?
  - Gasoline engines
  - Gasoline vapors
  - Paint and solvents
  - Natural sources



# LCCA Background

- Created in 2003 as an ozone reduction strategy
- Funded through APCD penalty funds
- Promoted by APCD's KAIRE program
- Winner of EPA Clean Air Excellence Award





# Reducing Lawn Care Emissions

Strategies include:

- Minimizing the amount of turf grass with low-maintenance landscaping; and
- Switching to air-friendly equipment for yard maintenance



# Minimizing Turf Grass

- Louisville Metro has over 260,000 residential lots
- Hours required to maintain (e.g., mowing, trimming, etc.) turf grass add up to significant ground level air pollution
- **272 tons** of ground level air pollution are produced each week assuming:
  - Each lot takes 1 hr. to mow
  - 2 lbs. of pollution per hr.





# Low $\neq$ No Maintenance

Metro Ordinances state (LMCO §156.052)



- Maximum 10 inches of grass and weeds
- The term “weeds” does not include “cultivated flowers and gardens”
- Civil penalties can result for not complying



All landscaping will  
require some maintenance

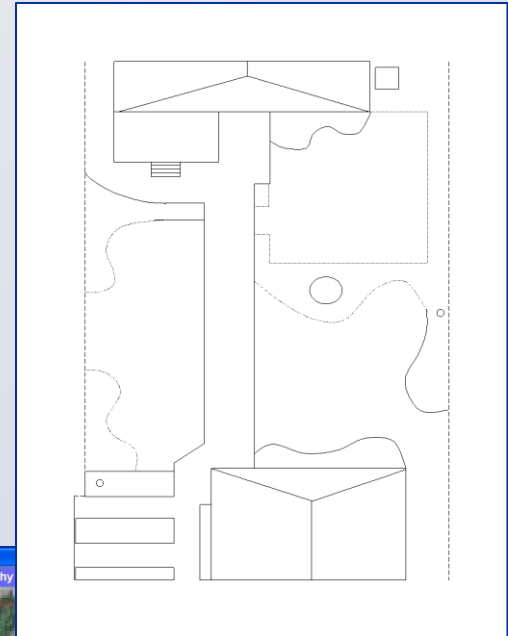
# Mowing = Emissions



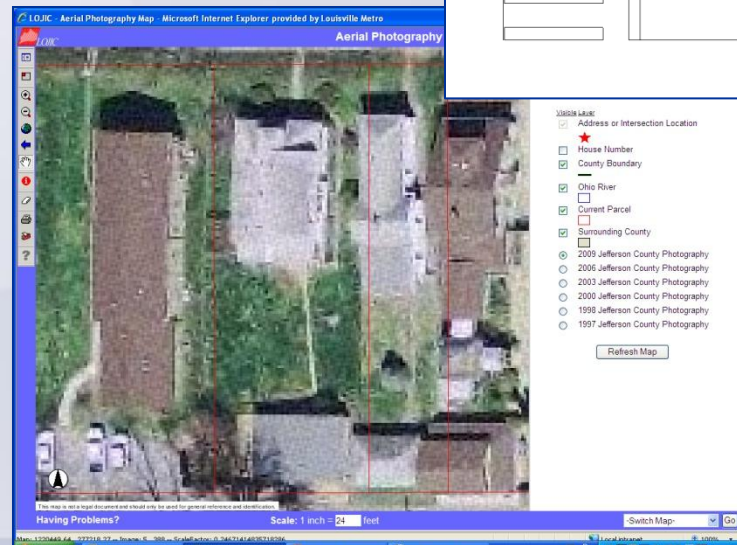
# Low-Maintenance Landscaping

## 1. Create a site plan for your yard:

- Measure your yard and create a sketch of the space you have available to plant, or
- Collect snapshots and an aerial photograph of your yard to help understand your space



Aerial photographs  
can be obtained online at  
<http://www.lojic.org/>

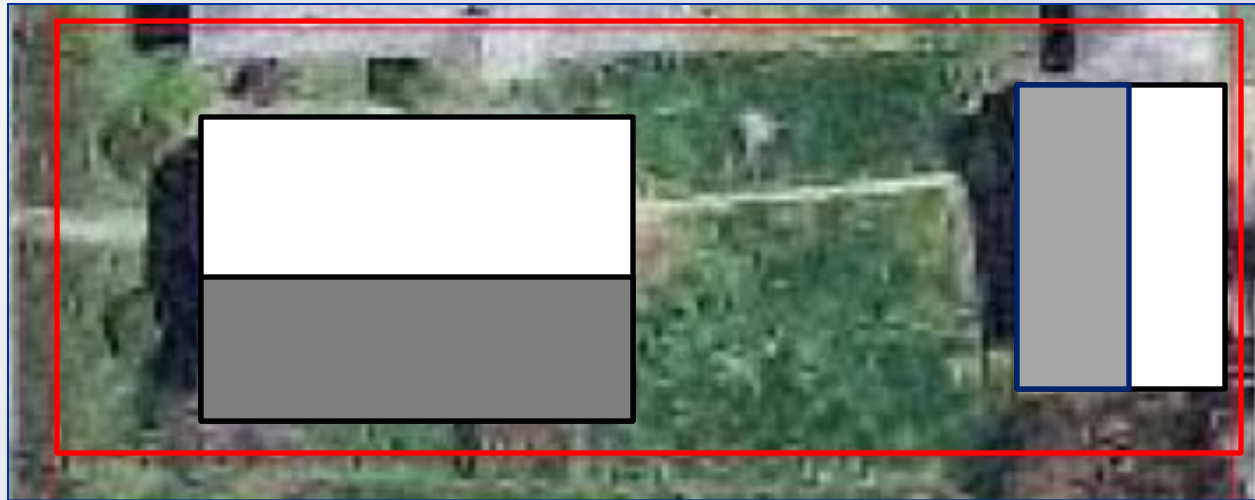




# Low-Maintenance Landscaping

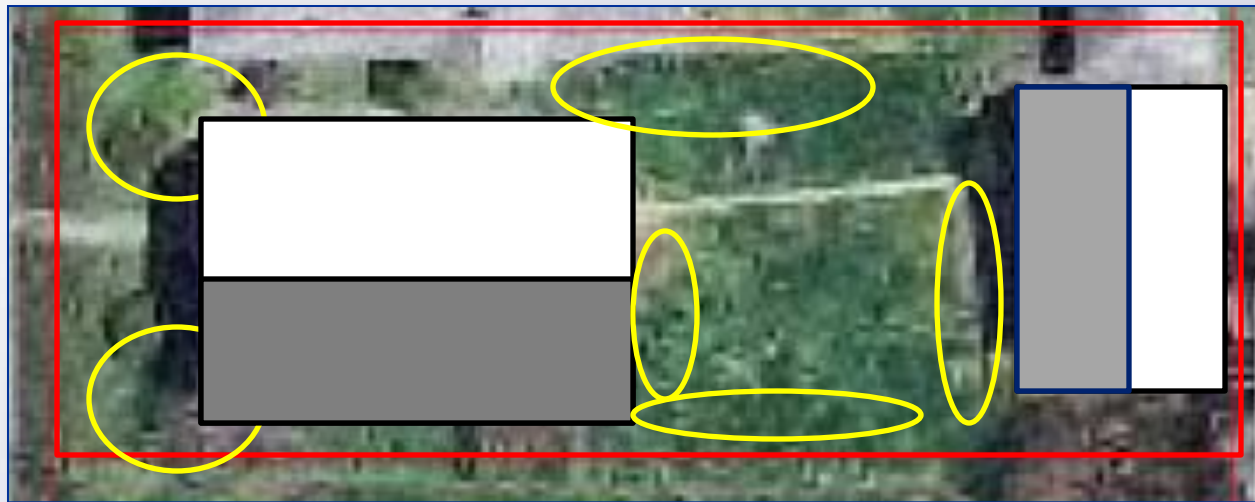
## 2. Choose areas to plant:

- Locate areas where trees and shrubs are in close enough proximity to be grouped together, and
- Areas around buildings and fences to cluster plantings



# Low-Maintenance Landscaping

3. Sketch areas on the site plan where you want to add plantings



# Low-Maintenance Landscaping

4. Make areas into beds by:
  - Removing grass with a spade or by smothering it with newspaper
  - Have soil tested and amend soil if needed

For soil testing, contact the Jefferson County Cooperative Extension Office - 569-2344 or check their website for a how-to video.

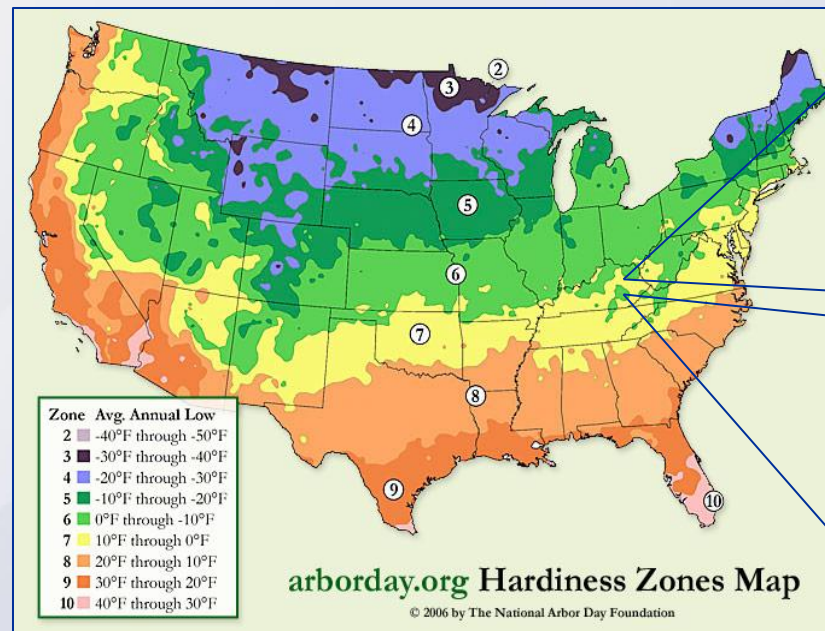




# Low-Maintenance Landscaping

## 5. Choose plants best suited for conditions

- Light
- Soil Type
- Drainage
- Hardiness
  - Zone 6
  - Zone 7



Consider using native plants, which require less maintenance once established

# Low-Maintenance Landscaping

## 6. Mulch plants and water until established





# Reducing Lawn Care Emissions

Strategies include:

- Minimizing the amount of turf grass with low-maintenance landscaping; and
- **Switching to air-friendly equipment for yard maintenance**





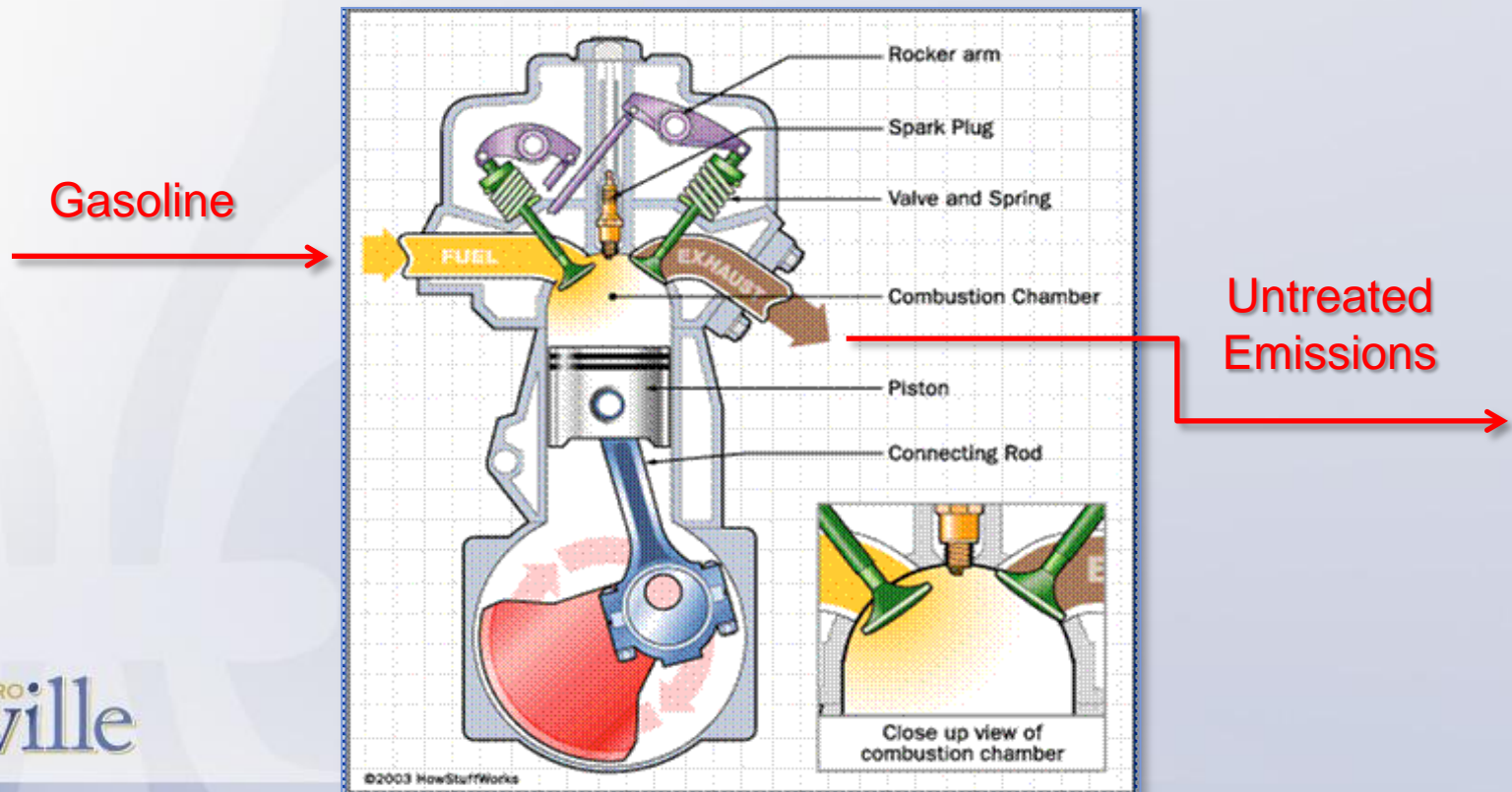
# Emission Controls

- Power plants use scrubbers, baghouses, and other types of control technologies to reduce emissions
- Cars and trucks use catalysts and filters to reduce emissions



# Emissions From Lawn Equipment

Unlike vehicles or power plants, most types of lawn equipment have a two-stroke engine, which has no emissions controls



# Electric vs. Gasoline Equipment

GAS MOWER vs. POWER PLANT POLLUTANTS (lbs./1 hr.)			
Pollutant	Gas Mower	Electric Mower	Difference
CH4	0.009294	0.002493954	0.006384
NMHC	0.194289	0.00073685	0.193429
CO	1.893739	0.000850212	1.892747
NOx	0.008635	0.008275394	-0.001022
SO2	0.000693	0.001434024	-0.000980
PM	0.001351	0.00554338	-0.005118
<b>Total</b>	<b>2.108001</b>	<b>0.019333814</b>	<b>2.0886672</b>

NMHC = Non-Methane Hydrocarbons CH4 = Methane

The difference in emission between electric lawn equipment vs. gas equipment is approximately **2 lbs./hr.** due to emissions controls on power plants



# Air-Friendly Equipment

Diverse equipment types available

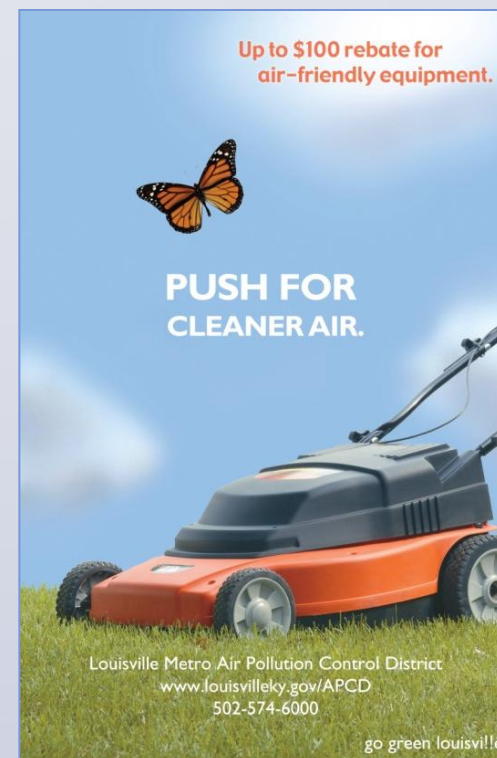
- Battery-powered
- Corded
- 4-stroke (reduces emissions)
- Human-powered



# LCCA Rebates

Louisville Metro Air Pollution Control District is again providing rebates of up to \$100 for air-friendly lawn equipment

Eligible Equipment	<i>Standard Rebate Without Trade-in</i>	<i>Bonus Rebate With Trade-in</i>
Electric Mower (corded or battery/cordless)	\$50	\$100
Replacement Mower Battery	\$25	\$50
Reel Mower (human powered)	\$25	\$50
Electric String Trimmer (min. 4 amp or 12 volt + 2-year warranty)	\$15	\$30
Electric Blower/Vacuum* (min. 9 amps, 200 mph force + 2-year warranty)	\$15	\$30
Replacement Batteries for trimmer & blower/vacuum	\$10	\$15



# Trade-In Old Equipment

Take your old gas piece of equipment drained of all fluids to one of Metro's three recycling centers that accepts them for a green recycling voucher (required for bonus rebate)

595 Hubbards Lane

Open year round

Tues - Sat 10:00 am to 5:00 pm

7219 Dixie Highway

Open March - September

Tues - Sat 10:00 am to 5:00 pm

636 Meriwether Ave

Open March - September

Tues - Fri 8:00 am to 6:00 pm

Sat 8:00 am to 3:00 pm





# LCCA Rebates

- If you trade-in, take your recycling voucher to a participating retailer for an instant rebate
- If you shop outside our network of participating dealers you can still get a rebate by sending us the following information:
  1. Your original receipt
  2. Proof of Jefferson County residency - typically a copy of your driver's license
  3. Green recycling voucher
- Please allow 60 days for us to process your rebate



# Environmental Stewardship

- Participants in our rebate program will receive an Environmental Stewardship Award for environmentally sensitive lawn maintenance and design
- Anyone can be nominated for this award by filling out a form on our website  
[www.louisvilleky.gov/APCD](http://www.louisvilleky.gov/APCD)
- We ask that you also send us a photograph of the property owner's yard being nominated



# Questions?